

A Literature Study On The Influence Of Parental Involvement On Elementary School Mathematics Learning Outcomes

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Abstract

Families, especially parents, occupy the most fundamental position as the primary educational agents, shaping a child's intellectual foundation and character from an early age. The quality of parental involvement in a child's learning process significantly influences the growth of learning motivation, which ultimately leads to improved overall academic achievement. This study aims to systematically review and synthesize the results of various previous empirical studies that focus on the relationship between active parental participation and students' mathematics learning outcomes at the elementary school level. The method used is a Systematic Literature Review (SLR) by searching for relevant scientific articles through three online academic platforms: Google Scholar, Garuda (Garba Rujukan Digital), and SINTA. The study results consistently demonstrate that active parental involvement has a significant positive impact on improving elementary school students' mathematics learning outcomes

Keywords: *Parental involvement; learning outcomes; mathematics; elementary school; systematic literature review.*

INTRODUCTION

In essence, education encompasses the entire process of acquiring knowledge and experience that takes place throughout human life, under various conditions that support an

1598

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individual's positive development (Ujud et al., 2023). For this reason, efforts to improve the quality of education have become an imperative that cannot be ignored. The educational process itself is not limited to the formal pathway through school institutions, but can also be obtained through nonformal pathways, including education that takes place within the family environment and the community (Hasanah, 2019). The family holds a strategic position as the first environment that shapes a child's character and personality from an early age, so that the earliest educational experiences actually originate from interactions within the (Wahy, 2012). Thus, the quality of family education plays a major role in producing a generation that is not only intellectually intelligent but also of noble character.

The intensity and quality of education provided within the family environment are closely correlated with children's level of motivation and interest in learning. Families that are able to create an optimal educational atmosphere tend to encourage children to be more enthusiastic about learning, which in turn has implications for better achievement. Conversely, a lack of family attention and guidance risks weakening children's enthusiasm for learning, which ultimately has a negative impact on their academic (Nasution, 2019). More broadly, education within the family aims to provide space for children to optimize their full potential, in the physical, spiritual, and intellectual dimensions alike (Besari, 2022).

The effectiveness of parental guidance in children's learning activities at home is strongly influenced by the extent of parents' involvement and seriousness in fulfilling their role. Parents who become so preoccupied with various activities that they neglect their child's learning progress for example, never asking about the schoolwork assigned by the teacher can cause the child to struggle in keeping up with subsequent material and risk falling behind their peers. This underscores that parents' active presence and attention are variables that strongly determine a child's learning (Theresia, 2020).

Learning outcomes can be understood as the achievements attained by students in the form of a comprehensive assessment covering the aspects of knowledge, attitudes, and skills, as a concrete manifestation of behavioral change following the learning (Nurrita, 2018). In terms of measurement, Bloom, as cited in (Meilani, 2017), classifies indicators of learning outcomes into three main domains—cognitive, affective, and psychomotor—which are collectively used to map students' competencies in a holistic manner. Meanwhile, the developmental characteristics of elementary school students indicate that they have entered the stage of logical and concrete operational thinking, in which they begin to be able to reason the relationships between (Rahmi



& Hijriati, 2021). Namun demikian, kemampuan berpikir abstrak pada siswa SD masih dalam tahap berkembang sehingga strategi pembelajaran perlu disesuaikan dengan kapasitas kognitif yang masih berorientasi pada hal-hal konkret (Herzamzam, 2018). Nevertheless, abstract thinking ability in elementary school students is still at a developing stage, so learning strategies need to be adapted to a cognitive capacity that remains oriented toward concrete.

Mathematics is a branch of science that is universal and applicable in nature, so its relevance can be felt in various aspects of life and it serves as a pillar of modern technological Progress (Lestari, 2021). It is this universality that underlies the integration of mathematics as a compulsory subject at every level of education. According to [source], the goal of mathematics learning is to support the humanization of the Indonesian nation, which requires sustained guidance throughout every learning process. This is in line with findings stating that mathematics is often perceived as a rigid, abstract discipline laden with complex symbols, which has the potential to create an unpleasant learning experience and shape students' negative perceptions of this subject (Hikmah & Saputra, 2023). Based on the explanation above, this study aims to systematically evaluate and summarize various findings from previous studies examining the influence of parental involvement on students' mathematics learning outcomes at the elementary education level.

METHOD

This study employs a Systematic Literature Review (SLR) approach, a literature review method carried out systematically through a series of stages consisting of selection, critical analysis, evaluation, and interpretation of various empirical studies directly related to the topic of the influence of parental involvement on elementary school students' mathematics learning outcomes. The data sources focus on scientific articles in the form of national journals traced through three academic database platforms, namely Google Scholar, Garuda (Garba Rujukan Digital), and SINTA. The article selection process refers to established inclusion criteria, comprising: articles published between 2016 and 2026, examining the variables of parental involvement and mathematics learning outcomes at the elementary school level, and written in either Indonesian or English. Excluded articles include studies unrelated to the research variables, those not available in full-text version, and those indicated to be duplicates. The article search was conducted using a combination of the keywords "parental involvement," "mathematics learning outcomes," and "elementary school," followed by screening based on title, abstract, and



content completeness. Data analysis was carried out using a thematic approach by grouping research findings according to main themes, namely forms of parental involvement, supporting factors, and their impact on learning outcomes, in order to produce a comprehensive conclusion.

RESULTS AND DISCUSSION

Through a systematic search process using a combination of the keywords "parental involvement," "mathematics learning outcomes," and "elementary school" across the Google Scholar, Garuda, and SINTA databases, five scientific journal articles were obtained that met all of the established inclusion criteria. These five articles were then analyzed in depth to reveal patterns in the findings, population characteristics, and research designs used. A comprehensive summary of the analysis results for each article is presented in Table 1 below.

No	Main Author, Year	Study Design	Population	Research Results
1	(Sulistiyanto, 2023)	Quantitative	Parents of Grade VI students at SD Negeri 3 Jambu, 2021/2022 academic year (n=34)	Parental involvement: never (0%), rarely (6%), often (47%), always (44%). Learning outcomes: poor (50%), fair (29%), good (21%), very good (0%). There is an influence of parental involvement on mathematics learning outcomes
2	(Ellis, 2024)	Quantitative (linear regression)	Parents of Grade V students at SD Negeri 3 Ambon (n=37)	There is a significant influence of parental involvement on student learning outcomes (p=0.030)
3	(Theresia, 2020)	Quantitative (T-test)	Parents of students at Agia Sophia Private Elementary School (n=30)	There is an influence of parental involvement on student learning outcomes



4	(Handayani, 2017)	Path analysis survey	Parents of Grade VI students (n=120, random sampling)	There is a direct positive influence of parental attention on mathematics learning outcomes
5	(Putri et al., 2025)	Qualitative (observation, interviews, documentation)	Parents of Grade IV students at SDN 019 Langsat Hulu, Kuantan Singingi Regency	Parental support plays an important role in students' achievement of mathematics learning outcomes

Based on the summary in Table 1, the findings from the five studies show consistency in indicating a positive relationship between parental involvement and elementary school students' mathematics learning outcomes. The variety of methodological approaches employed, ranging from quantitative to qualitative, strengthens the validity and reliability of the conclusions produced in this literature review. Active parental involvement in the child's educational process has been shown to make a real contribution to both academic development and the shaping of the child's character.

Parental participation manifested through intensive communication with the school, monitoring of learning activities, and the provision of moral support is a determining factor that cannot be ignored. It is not only teachers who play a role in shaping students' competence; parents also share an equally significant part in determining the quality of a child's learning (Sulistiyanto, 2023). As the party that knows and understands a child's overall condition best, parents bear a moral responsibility to guide and direct the child's behavioral development through various forms of intervention, both direct and indirect. Parents' active presence in a child's learning process not only improves academic achievement but also contributes significantly to the formation of a strong learning ethos (Ellis, 2024). In addition, parents' attentiveness in identifying their child's potential and talents, along with their readiness to provide adequate learning facilities, both at school and at home, constitutes an important investment in sustaining the child's enthusiasm for learning. Ideally, this involvement should be grounded in sincerity and long-term commitment in order to produce a generation of high integrity and broad insight.



The intensity of parental involvement is directly proportional to the level of learning achievement attained by (Handayani, 2017). This means that the higher the degree of parental participation in supporting a child's learning process, the greater the child's opportunity to achieve optimal learning outcomes. Consistent parental involvement is able to accelerate changes in learning behavior, broaden the horizons of knowledge, and internalize the positive values upheld by the family. Thus, the role of parents is not merely complementary, but that of a primary partner within the educational ecosystem, one that directly influences the overall quality of a child's growth and development.

Specifically in the context of mathematics learning, optimal parental involvement has been shown to play a significant role in building and strengthening students' self-confidence, particularly when facing mathematics problems that require higher-order reasoning (Putri et al., 2025). The self-confidence formed through this parental support subsequently fosters an optimistic attitude in students when facing learning challenges, including when dealing with mathematics material considered difficult. Conversely, students who receive insufficient support from their parents tend to develop a negative perception of their own abilities, which results in the formation of a belief that mathematics assignments are impossible to complete. This condition directly affects the decline in their motivation and mathematics learning outcomes. In contrast, students raised in a family environment that is supportive and full of appreciation tend to have a strong commitment to learning and a clear achievement orientation, enabling them to make a maximum contribution to the sustained improvement of their mathematics learning achievement. In other words, parenting patterns and patterns of parental attention have a very profound impact on the construction of students' self-concept and positive self-confidence.

Ultimately, parents are the first party fully responsible for the continuity of their children's education (Afni & Jumahir, 2020). Satisfactory mathematics learning achievement is not only a source of pride for the student but also a reflection of the success of parents and teachers in carrying out their respective roles synergistically. Therefore, parental guidance, attention, and involvement need to be maintained consistently and sustainably, given that their impact has been shown to shape a positive self-concept, boost self-confidence, and motivate students to keep learning with enthusiasm and perseverance.



CONCLUSION

A systematic review of five empirical studies consistently demonstrates that active parental involvement contributes positively and significantly to improved mathematics learning outcomes among elementary school students. These findings imply that synergy between families and educational institutions is a crucial component that cannot be separated from a quality learning ecosystem. Sustained parental participation has been shown to shape students' self-confidence, intrinsic motivation, and positive self-concept. Therefore, schools are advised to design structured collaboration programs with parents, while parents are encouraged to consistently and deliberately increase the intensity of their support for their children's learning.

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